

Remarks/Arguments

Claims 1 and 4 - 9 and 11 - 25 remain pending. Claims 1 and 14 have been amended, and claim 10 has been cancelled.

Claim Rejections under 35 USC § 103(a)

The Examiner rejected claims 1, 4, 5, 8-11, 14-16 and 18-21 as being obvious in view of U.S. Patent No. 6,957,747 (Peeler) and U.S. Patent No. 1,984,296 (Witter). The Examiner stated that Peeler shows an "anti-rotation device 64 with a slidable guide tube", which is the subject matter of cancelled claim 10. Applicant respectfully disagrees, and submits that Peeler does not show the features recited in cancelled claim 10.

For the Examiner's convenience, the text of cancelled claim 10 is excerpted below:

Claim 10: The displacement pump according to claim 1, wherein the anti-rotation means includes a guide tube having one end coupled to the cylindrical chamber and another end coupled to the stepper motor, the guide tube housing a portion of the threaded drive rod, a rod guide fixed to the threaded drive rod and slidable within the guide tube, the rod guide matingly engaging an inner surface of the guide tube to inhibit rotation of the threaded drive rod.

The guide tube serves two specific functions, as recited in claim 10 above. The first function is to shield the portion of the threaded drive rod that enters the cylindrical chamber when the plunger is advanced towards the fluid dispensing outlet. Paragraph [0049] of the description states:

"In otherwords, piston 220 can be fully withdrawn to load the cylinder tube chamber 206, but the portion of threaded drive rod 222 in contact with the interior of cylinder tube chamber 206 will never come into contact with stepper motor 214. In fact, this "contaminated" portion of the threaded drive rod 222 will remain within guide tube 210 so that it is shielded from dust/particulate matter, and prevents any filings or contaminants from entering the volume within cylinder tube chamber 206."

A tube should be plainly understood as being a hollow object. The guide tube recited in claim 10 is inherently a hollow object, which in the presently recited claim encloses or surrounds the threaded drive rod that enters the cylindrical chamber. Therefore, the guide tube protects or shields the threaded drive rod from accumulating contaminants since it surrounds the threaded drive rod. Furthermore, claim 10 recites that the guide tube has its two ends coupled to the stepper motor and the cylindrical chamber.

The second function of the guide tube is to radially lock the drive rod so that it does not rotate as the stepper motor is actuated, in combination with a rod guide fixed to the drive rod. As shown in Figure 8, the rod guide and the guide tube are shaped such that radial movement of the drive rod is prevented as the stepper motor is actuated.

Respectfully, the dispensing system of Peeler uses a channel consisting of two raised side walls fixed to the platform upon which rests the stepper motor, which are not coupled to either the stepper motor or the master cylinder 18 as recited in claim 10. The two raised side walls do not form a tube for surrounding the drive rod, as recited in claim 10. As is apparent from all the embodiments shown by Peeler, the portion of his drive rod that enters the master cylinder 18 is unshielded and exposed when the plunger is fully withdrawn. Therefore, contaminants accumulated on the drive rod can enter the master cylinder 18.

Applicant further submits that a person skilled in the art having an understanding of Peeler would have no reason to shield any portion of the drive rod. This is due to the fact that the Peeler system does not dispense usable fluid from its master cylinder 18 to the end user. The master cylinder 18 of the Peeler system transmits pressure via hydraulic fluid to a slave cylinder 20 that actually dispenses usable fluid to the end user. Therefore, contaminants entering master cylinder 18 are isolated from the fluid within the slave cylinder 20. Accordingly, Peeler does not require any shielding of his drive rod, thereby illustrating an absence of motivation to do so.

Therefore, Applicant submits that the combination of a guide tube and a rod guide recited in cancelled claim 10 is novel and not disclosed by Peeler. The guiding mechanism of Peeler is not any type of tube or structure that surrounds the drive rod and prevents rotation of the drive rod. Accordingly, in response to the Examiner's obviousness rejection to claims 1 and 14, Applicant has amended claims 1 and 14 to incorporate the subject matter recited in cancelled claim 10. Applicant has taken the opportunity to clarify a function of the guide tube, by stating that the guide tube shields the portion of the threaded drive rod from contaminants. Accordingly, Applicant believes that no further search is required, and submits that claims 1, 4, 5, 8-11, 14-16 and 18-21 are not obvious in view of Peeler and Witter since neither reference discloses or teaches a guide tube with a rod guide. In view of the amendments to claims 1 and 14, Applicant submits that the Examiner's obviousness rejections to claims 6, 7, 12, 13, 17 and 22 to 25 are now moot.

Applicant respectfully submits that claims 1, 4, 5, 8-11, 14-16 and 18-21 are now in form for allowance, and action to that end is requested.

The Commissioner is hereby authorized to charge any additional fees, and credit any over payments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,

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